AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A lead-free and cadmium-free dielectric paste comprising a solids portion wherein the solids portion comprises, prior to firing:

~~a.~~about 41.5 wt% to about 48.5 wt% SrO,

~~b.~~about 47 wt% to about 55 wt% ZrO_2,

~~c.~~about 0.5 wt% to about 2.5 wt% TiO_2,

~~d.~~about 0.05 wt% to about 1.5 wt% MgO, and

~~e.~~about 0.05 wt% to about 3 wt% B_2O_3.

2. (Currently Amended) A method of forming an electronic component comprising:

~~f.~~applying the dielectric paste of claim 1 to a substrate, and

~~g.~~firing the substrate at a temperature sufficient to sinter the dielectric material.

3. (Original) The method of claim 2 wherein the firing is conducted at a temperature of 1200°C-1350°C.

4. (Original) The method of claim 2 wherein the firing is conducted in an atmosphere having a partial oxygen pressure of about 10^{-12} atm to about 10^{-8} atm.

5. (Currently Amended) A multilayer ceramic chip capacitor comprising a fired collection of:

~~h.~~alternately stacked layers of the dielectric material of claim 1, and

~~i.~~layers of an internal electrode material comprising a transition metal other than Ag, Au, Pd, or Pt.

6. (Original) The multilayer ceramic chip capacitor of claim 5 wherein the internal electrode material comprises nickel.

7. (Currently Amended) A method of forming an electronic component comprising:

~~j.~~alternately applying layers of:

i. an oxide-containing dielectric material comprising the paste of claim 1 and

ii. a metal-containing electrode paste onto

iii. a substrate to form a laminar stack,

~~k.~~firing the substrate at a temperature sufficient to sinter the dielectric material,

~~l.~~cutting the laminar stack to a predetermined shape,

~~m.~~separating the cut stack from the substrate, and

~~n.~~firing the stack to sinter the metal in the electrode and fuse the oxides in the dielectric material, wherein the internal electrode and the dielectric material each have a layer thickness.

8. (Original) The method of claim 7 wherein the layers of dielectric material, after firing, have a thickness of about 1 microns to about 50 microns.

9. (Original) The method of claim 7 wherein the firing is conducted at a temperature of 1200°C to about 1325°C

10. (Original) The method of claim 7 wherein the firing is conducted in an atmosphere having a partial oxygen pressure of about 10^{-12} atm to about 10^{-8} atm.

11. (Original) The method of claim 7 wherein the metal-containing electrode paste comprises nickel.

12. (Withdrawn) A lead-free and cadmium-free dielectric paste comprising a solids portion wherein the solids portion comprises, prior to firing:

o. about 44.2 wt% to about 45.6 wt% SrO,

p. about 50.2 wt% to about 51.8 wt% ZrO_2,

q. about 0.1 wt% to about 0.4 wt% MgO,

r. about 1.5 wt% to about 1.6 wt% TiO_2,

s. about 0.3 to about 1.2 wt% Al_2O_3,

t. about 0.5 to about 2.2 wt% SiO_2, and

u. up to about 0.3 wt% CaO.

13. (Withdrawn) A method of forming an electronic component comprising:

v. applying the dielectric paste of claim 12 to a substrate and

w. firing the substrate at a temperature sufficient to sinter the dielectric material.

14. (Withdrawn) The method of claim 12 wherein the firing is conducted at a temperature of 1200°C-1350°C, and in an atmosphere having a partial oxygen pressure of about 10^{-12} atm to about 10^{-8} atm.

15. (Withdrawn) A method of forming an electronic component comprising:

x. applying particles of a calcined dielectric material to a substrate and

y. firing the substrate at a temperature sufficient to sinter the dielectric material,

z. wherein the dielectric material comprises, prior to firing, a composition selected from the group consisting of composition 1, composition 2, composition 3, composition 4, wherein prior to calcining,

i. composition 1 comprises

1. about 1 wt% to about 7 wt% $SrTiO_3$,
2. about 89 wt% to about 99 wt% $SrZrO_3$,
3. about 0.05 wt% to about 3 wt% B_2O_3, and
4. about 0.05 wt% to about 1.5 wt% MgO,

ii. composition 2 comprises

1. about 52 wt% to about 56 wt% $SrCO_3$,
2. about 41 wt% to about 45 wt% ZrO_2,
3. about 1 wt% to about 2 wt% TiO_2,
4. about 0.05 wt% to about 3 wt% B_2O_3, and
5. about 0.05 wt% to about 1.5 wt% MgO,

iii. composition 3 comprises

1. about 50 wt% to about 58 wt% $SrCO_3$,
2. about 40 wt% to about 46 wt% ZrO_2,
3. about 0.5 wt% to about 3 wt% TiO_2,
4. about 0.05 to about 1 wt% MgO,
5. about 0.05 wt% to about 2 wt% Al_2O_3,
6. about 0.05 wt% to about 3 wt% SiO_2,
7. CaO, provided the amount does not exceed about 1 wt%, and
8. SrO, provided the amount does not exceed about 0.5 wt%, and

iv. composition 4 comprises

1. about 2 wt% to about 5 wt% $SrTiO_3$,
2. about 90 wt% to about 98 wt% $SrZrO_3$,
3. about 0.05 to about 2 wt% MgO,
4. about 0.05 wt% to about 2.5 wt% Al_2O_3,
5. about 0.05 wt% to about 3.5 wt% SiO_2,
6. SrO, provided the amount does not exceed about 1 wt%, and
7. CaO, provided the amount does not exceed about 1 wt%.

16. (Withdrawn) The method of claim 15 wherein the firing is conducted at a temperature of 1200°C-1350°C.

17. (Withdrawn) The method of claim 15 wherein the firing is conducted in an atmosphere having a partial oxygen pressure of about 10^{-12} atm to about 10^{-8} atm.

18. (Withdrawn) The method of claim 15 wherein the firing is conducted at a temperature of 1200°C to about 1325°C.

19. (Withdrawn) The method of claim 15 wherein the dielectric material comprises, prior to firing, composition 1.

20. (Withdrawn) The method of claim 15 wherein the dielectric material comprises, prior to firing, composition 3.

21. (New) A lead-free and cadmium-free dielectric paste comprising a solids portion wherein the solids portion prior to firing consists essentially of:

about 41.5 wt% to about 48.5 wt% SrO,

about 47 wt% to about 55 wt% ZrO_2,

about 0.5 wt% to about 2.5 wt% TiO_2,

about 0.05 wt% to about 1.5 wt% MgO, and

about 0.05 wt% to about 3 wt% B_2O_3.

22. (New) A method of forming an electronic component comprising:

applying the dielectric paste of claim 21 to a substrate, and

firing the substrate at a temperature sufficient to sinter the dielectric material.

23. (New) The method of claim 22 wherein the firing is conducted at a temperature of 1200°C-1350°C.

24. (New) The method of claim 22 wherein the firing is conducted in an atmosphere having a partial oxygen pressure of about 10^{-12} atm to about 10^{-8} atm.

25. (New) A multilayer ceramic chip capacitor comprising a fired collection of:

alternately stacked layers of the dielectric material of claim 21, and

layers of an internal electrode material comprising a transition metal other than Ag, Au, Pd, or Pt.

26. (New) The multilayer ceramic chip capacitor of claim 25 wherein the internal electrode material comprises nickel.

27. (New) A method of forming an electronic component comprising:

alternately applying layers of:

i. an oxide-containing dielectric material comprising the paste of claim 21 and

ii. a metal-containing electrode paste onto

iii. a substrate to form a laminar stack,

firing the substrate at a temperature sufficient to sinter the dielectric material,

cutting the laminar stack to a predetermined shape,

separating the cut stack from the substrate, and

firing the stack to sinter the metal in the electrode and fuse the oxides in the dielectric material, wherein the internal electrode and the dielectric material each have a layer thickness.

28. (New) The method of claim 27 wherein the layers of dielectric material, after firing, have a thickness of about 1 microns to about 50 microns.

29. (New) The method of claim 27 wherein the firing is conducted at a temperature of 1200°C to about 1325°C

30. (New) The method of claim 27 wherein the firing is conducted in an atmosphere having a partial oxygen pressure of about 10^{-12} atm to about 10^{-8} atm.

31. (New) The method of claim 27 wherein the metal-containing electrode paste comprises nickel.